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(54) MICROFLUIDIC PLATFORMS FOR USE WITH SPECIFIC BINDING ASSAYS, SPECIFIC BINDING ASSAYS THAT EMPLOY MICROFLUIDICS, AND METHODS

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(57) **ABSTRACT**

A microfluidic platform for use with a specific binding assay apparatus includes an elongate, nonlinear channel through which a sample or sample solution may flow to be brought into contact with capture molecules immobilized relative to a number of sensing zones on a reaction surface of the specific binding assay apparatus. The microfluidic platform may include regions with enlarged widths, which are to be positioned adjacent to and in communication with sensing zones of the specific binding assay apparatus. In addition, the microfluidic platform may include mixing structures that protrude into the channel so as to create folding of and, thus facilitate mixing of the constituents of a sample solution as the sample solution flows through the channel. Specific binding assay apparatus that include microfluidic platforms thereon are also disclosed. In addition, methods for fabricating the microfluidic platform are also disclosed, as are methods for using the microfluidic platform.